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EXAMINER

NGUYEN, MADELEINE ANH VINH

ART UNIT PAPER NUMBER

2626

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/624,161

Applicant(s)

IWAKI, YASUHARU

Examiner

Madeleine AV Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19, 22 and 23 is/are rejected.
- 7) ☒ Claim(s) 18, 20, 21v is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This communication is responsive to amendment filed on June 24, 2004.

Applicant adds new claims 17-23.

Response to Applicant's Remarks

1. Applicant remarks that Ito is a non-analogous art and cannot be properly used as a basis for a 103 rejection. Ito relates to measuring technology utilized for land surveying which is different from what stated in the specification on page 1 as "image processing in which an image having a strong possibility of failing in computing a proper amount of image correction in an image correcting amount computing unit ...". In addition, the image correction is performed on an image, in contrast, Ito teaches using images, not to correct the images themselves, but to form an orthogonally projected image.

"The determination that a reference is from a non-analogous art is twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved." In re Wood, 202 USPQ 171 (CCPA 1979). In the instant application, reference Ito is within the field of endeavor or reasonably pertinent because it solves the disclosed problem in the same or substantially the same manner as applicant. For instance, the claimed invention states "An image processing apparatus comprising ..." or "An image processing method comprising the steps of ...". Ito also teaches an image processing apparatus and method comprising means for or the steps of as claimed in claims 1-3, 5-15.

It is noted that “an orthogonally projected image” is also an image and the image correction in Ito is performed from the image data received from the image input section 4 since the orthogonally projected image is also from the image data of an original image.

2. Applicant remarks that Ito fails to teach, suggest or provide motivation for an image correcting amount computing unit and image processing unit as claimed.

Ito teaches a calculating section 102, a forming section 103, a correcting section 104 and a measuring section 105. The calculating section 102 obtains a transformation parameter, calculate a transformation parameter and correct lens distortion (col. 5, line 53 – col. 6, line 6). The forming section 103 forms an ortho-image from photographic coordinate values of the control points/orienting points and ground values based on a plurality of stereo images inputted by the image input section 4. The ortho-image correction section 104 corrects the image coordinates obtained by the ortho-image forming section 103 and displays an image shortage area or an improper area which results from formation of the orthogonally projected image. A correction data forming function is included in the correcting section 104 which forms data for rephotographing if the determining function detect a non-overlapped area/non-photographed area or a shortage/failed positioning of the control points/orienting points in the ortho-image (col. 6, line 7 – col. 7, line 12). Thus, the correction section 104 is an image processing unit since it performs image processing based on the proper amount of image correction computed by the image correcting unit 102 and 103. In addition, Ito teaches “unknown parameters are obtained based on the following procedure... 3. By using the least squares method, a correction amount is obtained for the approximate values. 4. the approximate value is corrected. 5. By using the

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corrected approximate value, operations from 2 to 5 are repeated until results converge.” (col. 19, lines 1-14).

3. Applicant remarks that nowhere in the reference is there any mention of wherein the proper amount of image correction computed by the image correcting amount computing unit is evaluated for a degree of correctness.

In addition to the above discussion, Ito further teaches “if a formed ortho-image is not what is desired, ortho-image correction is performed. In this ortho-image correction work, determination is made as to whether a satisfactory image is obtained or not . If “OK” then the process moves to a next area to be measured, and the same operation is repeated from the control point measuring. On the other hand, if no satisfactory image is obtained in the ortho-image correction work, then the additional image measuring is carried out again, and the foregoing operations are repeated until a satisfactory image is obtained.” (col. 7, lines 44-54).

Furthermore, “After the photographing, various set values necessary for image processing, e.g., both or either of an ortho-image forming range and resolution, and so on, are set onto the portable computer.” (col. 8, lines 41-66; col. 9, lines 7-40). Thus, Ito does teaches that the proper amount of image correction is evaluated for a degree of correctness.

4. Applicant remarks that, for claim 3, Ito fails to teach, suggest or provide motivation for a verification unit in which an operator performs an input operation for verifying said image belonging to the group of images as claimed.

Ito teaches that “Photographing of additional images is performed so as to include all the control points set by the control point setting carried in the control point measuring processing. Then, the images are inputted to a PC, the additionally photographed images are displayed on the display section and an additional image to be measured is selected...” (col. 15, lines 1-13). Thus, the operator performs an input operation for verification when selecting an image belonging to the group of images in which the correction is performed in the different directions for the proper amount of image correction. In addition, Ito further teaches “sticking of a plurality of images is described more. If the number of images is not singular but plural, then selection of an image is decided based on a positional relationship between the control points and the camera...” (col. 16, lines 1-13).

5. Applicant remarks that light conditions are not significance in Ito which relates to a geographic survey where light can fluctuate greatly between areas, and also over large expanses of time in which the survey occurs.

Ito teaches “For increasing reliability of position detection, two images are photographed, one with a strobe light and the other without a strobe light, ...” (col. 11, lines 44-50). Thus, light conditions are significance in Ito.

Thus, Applicant's remarks on the rejection of the last Office action are not persuasive and the rejection of claims 1-16 is maintained.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 5-15, 17, 19, 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (US Patent No. 6,442,293).

Concerning claim 1, Ito et al discloses an image processing apparatus (Fig.1) comprising an image correcting amount computing unit (102, 105) for computing a proper amount of image correction based on image data of an image of an original delivered from an image input unit (4, 6); an image processing unit (104) for performing image processing based on the proper amount of image correction computed by the image correcting unit to produce a processed image; and a display unit (5) for monitoring the processed image obtained by the image processing unit; wherein the proper amount of image correction automatically computed by the image correcting amount computing unit is evaluated for a range of correctness and a warning is given based on the result of the evaluation (Figs.4-6, 12, 14-15; Abstract; col. 5, line 3 – col. 19; col. 7, lines 28-67; col. 8, line 41 – col. 9, line 65).

Ito does not directly teach that the proper amount of image correction is evaluated for a degree of correctness and a warning is given when the degree of correctness is low. However, Ito teaches that “the ortho-image forming section 103 can include a function of discriminately displaying a non-overlapped area/non-photographed area determined by the ortho-image correcting section 104 or a shortage/failed positioning of the control points/orienting points on

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the display screen of the ortho-image.” (col. 6, lines 21-30); “the ortho-image correcting section 104 can form, if a plurality of centrally projected images are obtained, an orthogonally projected image by combining images selected according to a proper standard, e.g. images of places having specified/lower reduction scales or having relatively small reduction scales, alternatively images close to the measuring point or the control point, on priority basis.” (col. 6, lines 31-47); “the ortho-image correcting section 104 determines, based on the ortho-image formed by the ortho-image forming section 103, necessity of changing a photographing position/orienting points... the determining function includes a function of determining a shortage/failed positioning of control points/orienting points includes in a portion overlapped by at least two stereo images in the ortho-image.” (col. 6, lines 48-67). It would have been obvious to one skilled in the art to consider Ito teaches that the proper amount of image correction is evaluated for a degree of correctness and a warning is given when the degree of correctness is low since the ortho-image correcting section corrects the image based on a range of condition of correctness (degree of correctness) calculated by the coordinate transformation parameter calculating section 102 and the additional image measuring section 105 and a warning is displayed when there is improper area or condition of the image is detected (or when the degree of correctness is low).

Concerning claims 2, Ito further teaches that the image input unit is an image reading unit (CCD), a readout unit for reading out the image data from a digital camera or an image data recording medium or a communication unit for downloading the image data via communication (claim 2), (col. 5, lines 6-7, lines 26-38); the images other than the failure image are not displayed on a verification screen in the display unit (claim 5), (S609, Fig.12; S707, Fig.14; Fig.15); for the failure image, each image is based on the proper amount of image correction in

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each of at least two of the different directions is displayed on the display unit to ask for the operator's instruction for selection (claims 6, 9), (Figs.14-15; col. 5, lines 31-38; col. 17, lines 17-41); an image storage unit (2, Fig.1) for storing processed image or failure images (claims 7, 10, 11), (col. 5, lines 26-52); images other than the image for which the warning is given are not displayed on a verification screen in the display unit (claim 8), (Fig.15; col. 17, lines 17-21); a unit (5, 6) for outputting the processed image obtained by the image processing unit to an external unit as the image data.

Concerning claim 3, Ito further teaches the warning belongs to a group of images in which correction is performed in different directions for the proper amount of image correction, and the image processing apparatus further including a unit (5, 6) in which an operator performs an input operation for verifying the image belonging to the group of the images in which the correction is performed in the different directions for the proper amount of image correction (col. 6, lines 17-67; col. 7, lines 36-67; col. 8, line 55 – col. 26; col. 16, lines 40-67; col. 17, lines 22-37).

It is noted that although Ito does not directly mention that the display section 5 and the input section 6 are verification units, but Ito teaches that “the confirmation of the display screen by a measuring operator” (col. 9, lines 7-8), “the decision as to necessity of re-photographing based on the results of checking, and the decision as to the step to which the process returns when re-photographing is necessary, may be manually made by the operator based on the display screen” (col. 9, line 66 – col. 10, line 5), and “any operator can form an ortho-image while easily performing complementary measuring” (col. 20, lines 1-5). It would have been obvious to one skilled in the art to consider the display section 5 and the input section 6 are verification units

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since the operator can check the result from the display screen and performs an input operation through the input section 6 for verifying the images.

Concerning claims 13-14, Ito discloses an image processing apparatus as discussed in claims 1-3 above.

Claim 15 is method claims of apparatus claims 1-3. Claim 15 is rejected for the same rationales set forth for claims 1-3.

Concerning claims 17, 19, 22, 23, Ito further teaches a characteristic quantity computing portion (101, Fig.1) for reading prescan data of the image to generate the image data, wherein the image data is used to compute the proper amount of image correction (Fig.5); wherein the proper amount of image correction is evaluated based on the image data of the image or the original (col. 5, lines 13-38).

8. Claims 4, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al as applied to claim 1 above, and further in view of Tanaka et al (US Patent No. 6,630,958).

Concerning claims 4 and 16, Ito further teaches the image for which the correction is performed in the different directions for the proper amount of image correction is a failure image and the group of the images in which the correction is performed is group that contains images taken with defects.

Ito fails to go to details that the defects are unusual types of light sources, color failure, images taken with backlight or electronic flash. However, it was commonly known in the art that the images taken from a digital camera could have some defects as discussed above. Tanaka et al disclose a digital camera connecting to a computer for correcting the image data wherein images are images taken with different light sources, backlight or electronic flash (Fig.711, 12,

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20, 22, 23; col. 5, lines 21-57; col. 11, lines 36-57; col. 15, lines 20-48). It would have been obvious to one skilled in the art to combine the teaching of Tanaka et al to the system in Ito et al since the system in Ito connect to a plurality of different digital cameras or input devices that provide images for processing wherein images taken from digital cameras can include failure image with unusual types of light source, backlight and electronic flash.

Allowable Subject Matter

9. Claims 18, 20, 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. The following is an Examiner's statement of reasons for the indication of allowable subject matter: claims 18, 20, 21 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image processing apparatus and method as claimed in claims 1, 14 wherein the image data includes at least one of density histogram, average density, minimum density, maximum density, large-area transmission density, central density, and peripheral density.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

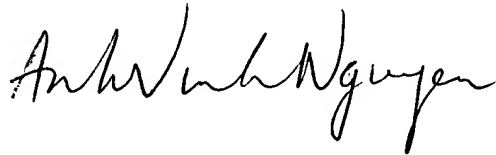
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 703 305-4860. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Madeleine AV Nguyen
Primary Examiner
Art Unit 2626

August 23, 2004.